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RECOMMENDATIONS FOR THE ESTABLISHMENT  
OF AN  
IN-HOUSE PATENT GROUP

The Research Center Management has made a study of the need for a viable and aggressive patent function within Philip Morris Incorporated. This report gives the results of our findings and recommends that Philip Morris establish an in-house patent group as part of the Corporate Legal Department.



H. Wakeham

July 7, 1975

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## INTRODUCTION

Quotation from Worth Wade  
Reference Below

"Corporate Management is often at a loss to understand and to organize the patent function in the company. This uncertainty arises from the failure to understand the proper functions of a Patent Department. This department must be organized to render services to many company departments while maintaining unity of patent policy. The patent function should be considered as having a four-fold purpose:

1. Protecting the fruits of the research effort.
2. Providing insurance against interruption of production.
3. Creating income by sale or licensing of patent rights.
4. Protecting and enforcing trademark rights.

There has been a lot of discussion as to the position of the Patent Department in the corporate structure. Some Managements, knowing that patent attorneys are technically trained and deal with technical innovations, have placed the patent function under the direction of the Director of Research or Chief Engineer. Other Managements have considered only the legal aspects of the patent attorneys and have placed the patent function under the company's chief counsel or legal department. This book will show that the proper policy is to shift the Patent Department from one control to another as the company grows and its activities become more complex.

For example, let us assume that a new company is organized to develop a patented invention. In most cases, the inventor will be retained as a consultant or, more likely, will become Director of Research for the new company. In that capacity, the Director will work personally with outside patent counsel in the filing and prosecution of patents as improvements are made on the basic invention. However,

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when the number of pending applications increases to 10 or 15 and the duties of the Research Director makes it impossible for him to render proper service to outside counsel, the company may hire a staff patent attorney to act as liaison between the Research Department and outside counsel. In this case, the staff attorney normally will report to the Research Director.

However, when the company acquires other products and makes acquisitions, the Research Director may find that he is no longer able to administer the patent function and at this stage, a separate Patent Department is organized with the Manager usually reporting to the President or Executive Vice-President.

With further growth of the company, there may be formed joint ventures and wholly owned subsidiaries, both domestic and foreign. The company has now become an international organization with many perplexing legal problems' relating to anti-trust, distributorships, and trade practices and licensing. At this stage, the President or Executive Vice-President is no longer able to give the time necessary for the administration of the patent function. This is the stage at which, in many large corporations, the control of the patent function passes to the corporate Legal Department.

This case history indicates that a flexible attitude should be taken by Management regarding the position of the Patent Department in the corporate structure."\*

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\*Worth Wade, The Corporate Patent Department, Its Organization - Administration - Functions. Ardmore, Pennsylvania: Advance House, 1963, pp.5-7.

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## OUR EXPERIENCE

Philip Morris Research has extensive experience in developing patents to protect the results of our research effort. In the past 15 years we have acquired 205 patents. We have on the Research Center staff an experienced qualified patent attorney and two qualified patent agents (we are now undergoing a change of personnel with respect to the patent attorney). In addition, we have Dr. T. S. Osdene, Director of Research, who himself has been responsible for 44 patents and Dr. Norman Rainer, one of our patent agents, who has also had 15 patents issued in his name. In order to give the reader some feeling for the breadth of our experience, the following pages list these various patents as issued in the United States. We also extend many of these same patents to many foreign countries. In summary, we are well acquainted through direct experience with the problems of preparing, filing, and prosecuting patents in a wide variety of disciplines.

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Dr. Thomas S. Osdene, Director of Research  
 Patents Issued

June 25, 1975

No. of Patent	Date Patented	Title of Patent
2,975,180	Mar. 14, 1961	4,7-Diamino-2-Aryl-6-Pteridinecarboxamides
3,104,242	Sept. 17, 1963	2-Phenyl-6- $\alpha$ -Naphthyl-4,7-Diaminopteridine
3,122,540	Feb. 25, 1964	2-Aryl-4,7-Diamino-N-(Aminoalkyl)-6-Pteridine-Car-
3,122,543	Feb. 25, 1964	N-(Alkoxyalkyl)-4,7-Diamino-2-Aryl-6- boxamides Pteridinecarboxamides
3,122,544	Feb. 25, 1964	4-Amino-2-Aryl-6H-Indeno(2,3-g)-Pteridin-6-Ones
3,122,545	Feb. 25, 1964	N,N'-Ethylenebis(4,7-Diamino-2-Aryl-6- Pteridinecarboxamides)
3,122,546	Feb. 25, 1964	4,7-Diamino-2-(Substituted)-N-Substituted- 6-Pteridinecarboxamides
3,122,547	Feb. 25, 1964	2,4,7-Triamino-6-Pteridine Carboxamides
3,133,923	May 19, 1964	2,4,7-Triamino-6-(2-Benzimidazolyl)-Pteridine
3,134,776	May 26, 1964	4-Amino-8,9-Dihydro-2-Arylbenzo(g) Pteridin-6 (7H)-Ones
3,138,592	June 23, 1964	2-Aryl-4,7-Diamino-Pteridine-6-Carboxamides
3,138,594	June 23, 1964	4,7-Diamino-N-(2,2-Dialkoxyethyl)-2-Aryl- 6-Pteridinecarboxamides
3,138,595	June 23, 1964	N-(Cycloalkyl)-Pteridinecarboxamides
3,145,205	Aug. 18, 1964	6-Benzoquinoxaline-Carboxamides
3,171,836	Mar. 2, 1965	2,4,7-Triamino-N-(Substituted)-6-Pteridine- carboxamides
3,176,016	Mar. 30, 1965	4,7-Diamino-2-Morpholino-6-Pteridinecarboxamides
3,177,217	Apr. 6, 1965	4,7-Diamino-N-(Substituted)-2-Alkylthio-6- Pteridinecarboxamides
3,180,868	Apr. 27, 1965	3,6-Diamino-N-(Substituted)Pyrido[2,3-b]- Pyrazine-2-Carboxamides
3,180,869	Apr. 27, 1965	2-Alkyl-4,7-Diamino-6-Pteridine-Carboxamides
3,185,688	May 25, 1965	3,6-Diamino-N-(Substituted)-2-Quinoxaline Carboxamides

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Dr. Thomas S. Osdene  
Patents Issues

June 25, 1975

No. of Patent	Date Patented	Title of Patent
3,192,212	June 29, 1965	3,6-Diamino-N-(2,2-Dialkoxyethyl)-2-Quinoxaline-carboxamides
3,207,757	Sept. 21, 1965	2-Aryl-6-Aroyl-4,7-Diamino-Pteridines
3,209,004	Sept. 28, 1965	3,6-Diamino-N-(2,2-Dialkoxyethyl)pyrido [2,3-b]Pyrazine-2-Carboxamides
3,217,001	Nov. 9, 1965	Derivatives of 1H-2,1,3-Benzothiadiazin-4(3H)-One 2-Oxide and Intermediates therefor
3,234,226	Feb. 8, 1966	2,4,7-Triamino-6-(Biphenyl)Pteridines
3,254,085	May 31, 1966	4,7-Diamino-6-Pteridinecarboxamides
3,256,283	June 14, 1966	2,4,7-Triamino-6-(2,6-Disubstituted Phenyl) Pteridines
3,264,295	Aug. 2, 1966	4-Amino-7-Hexylamino-N-Hexyl-2-Phenyl-6-Pteridinethiocarboxamide
3,267,102	Aug. 16, 1966	Reaction products of 4,6-Diamino-5-Nitrosopyrimidine with Alkyl Benzoylacetates, and process of obtaining the same
3,278,533	Oct. 11, 1966	7-Hydroxy-6-Pteridinecarboxamides and 7 - Mercapto - 6 - Pteridinethiocarboxamides
3,291,797	Dec. 13, 1966	3,4-Dihydro-2H-Pyran-2-Ylmethyl Pteridine Derivatives
3,294,799	Dec. 27, 1966	2-Aryl - 7 - Oxopteridinecarboxamides and 2 - Aryl-7-Oxo-Pteridinethiocarboxamides
3,254,085	May 31, 1966	4,7-Diamino-6-Pteridinecarboxamides
3,334,097	Aug. 1, 1967	3 - Amino - 2 - (2 - Oxazolin - 2 - YL)Benzo(f) Quinoxalines, Intermediates Therefor and Derivatives Thereof
3,336,300	Aug. 15, 1967	1,2,3,4-Tetrahydro-5H-Benzodiazepin-5-Ones
3,351,659	Nov. 7, 1967	Aminobenzamides
3,423,509	Jan. 21, 1969	Malaria Therapy with 2,4,7-Triaminopteridine

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Dr. Thomas S. Osdene  
Patents Issued

June 25, 1975

No. of Patent	Date Patented	Title of Patent
3,452,037	June 24, 1969	N-[O-(2-Oxazolin-2YL)Phenyl]Alkyl or Aryl Sulfonamides and Intermediates in the Production Thereof
3,457,258	July 22, 1969	5H-1,4-Benzodiazepin-5-Ones and -5-Thiones
3,516,998	June 23, 1970	4-Amino-2-Aryl-7-Alkylamino-6-Pteridine-carboxamidines
3,517,061	June 23, 1970	5H-1,4-Benzodiazepin-5-Ones
3,522,274	July 28, 1970	2,3-Dihydro-1-Alkyl-7-Sulfamoyl-4,1-Benzoxazepin-5(1H)-Ones
3,534,058	Oct. 13, 1970	Sulfonylpyrazoles
3,553,198	Jan. 5, 1971	2,4,6-Substituted-5-Arylsulfonyl-Pyrimidines

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Dr. Norman B. Rainer, Patent Agent  
Patents Issued

July 2, 1975

No. of Patent	Date Patented	Title of Patent
3,189,646	June 15, 1965	Process for the preparation of N-methylol amide derivatives.
3,190,916	June 22, 1965	Process for the production of N-substituted amides from cyanohydrin derivatives.
3,210,421	Oct. 5, 1965	Tris-(amidoxime methyl)amine.
3,218,345	Nov. 16, 1965	Poly(isocyanatoethyl)amines and process therefor.
3,234,185	Feb. 8, 1966	Process for increasing the molecular weight of amine-containing polymers.
3,326,974	June 20, 1967	Polyamides and process therefor.
3,516,956	June 23, 1970	Spinnable compositions comprising a fiber forming polyamide, a fiber forming polyester and a spinning aid.
3,580,891	May 25, 1971	Water-insoluble cross-linked polymeric reaction product of ethylene diamine and nitrilotriacetic acid or derivative.
3,654,679	April 11, 1972	Microvoiding with alkali metal hydroxide a heat fused fabric of polyamide with fiber occluded axially aligned polyester microfibers.
3,674,683	July 4, 1972	Process for the removal of oil from the surface of a body of water.
3,674,722	July 4, 1972	Microporous structure and method of making the same.
3,715,339	Feb. 6, 1973	Chelation polymer from nitrilo compound and ethyleneimine compound.
3,784,490	Jan. 8, 1974	Microporous vinyl chloride polymers and method of making the same.
3,809,669	May 7, 1974	Stable vinyl chloride polymer structures and method of producing them.
3,887,730	June 3, 1975	Microporous styrene polymers and method of making same.

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## HISTORICAL PERSPECTIVE

In its early days Philip Morris, similar to the other cigaret companies, depended largely on secrecy to protect proprietary information and inventions. Those inventions which it decided to patent were simply turned over to Watson, Leavenworth, Kelton, & Taggart for the preparation, filing, and prosecution of applications. With the establishment of a research and development department and its subsequent growth, it was found that more and more inventions were coming from R&D and that as a consequence a great deal of time on the part of W.L.K.T. attorneys was required in Richmond to obtain the necessary information from inventors for the filing of patent applications. In order to expedite this process, and also to reduce the cost, in 1962 we employed an in-house patent liaison officer. Her function was to search the activities of possible inventors at the Research Center and to expedite the preparation of invention records and disclosures for submission to W.L.K.T. attorneys. With the establishment of this function the number of applications and issued patents increased substantially so that by 1971 approximately 20 U.S. patents were being issued annually to Philip Morris. Since that time there has been some decline in the number of issued U.S. patents. While numbers are not in themselves important, they do indicate that even though our Research Center professional staff has grown our attempts at maintaining an aggressive patent program have not been altogether successful.

This point is particularly of interest in comparison with the numbers of patents being taken out by our major competitors, R. J. Reynolds and Brown & Williamson.

Early in our pursuit of a more aggressive patent approach, we prepared a patent policy guideline which was subsequently modified and revised as our experience grew. The latest issue which appeared on May 27, 1970, is enclosed for reference to the reader.

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PHILIP MORRIS U. S. A.  
INTER-OFFICE CORRESPONDENCE  
RICHMOND, VIRGINIA

To: . Dr. H. Wakeham  
From: . G. E. Inskeep  
Subject: . Patents to Philip Morris, Inc.

Date: June 27, 1975

The following are totals of U.S. patents issued to Philip Morris since 1959. You already have figures for recent years, except that 1974 has been revised; approximately eight have been issued so far this year.

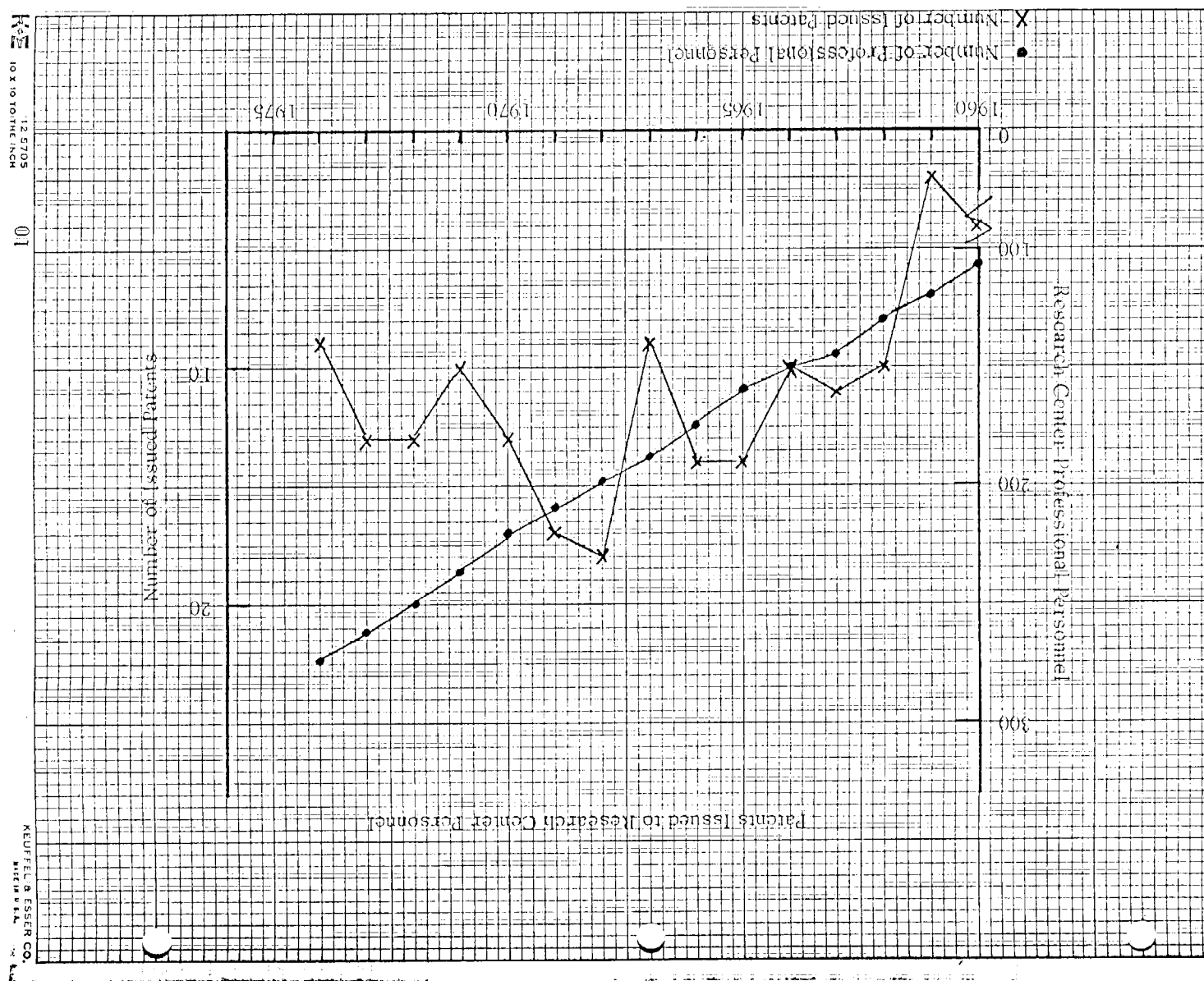
1960	4
1961	2
1962	10
1963	11
1964	10
1965	14
1966	14
1967	9
1968	19
1969	20
1970	21
1971	21
1972	20
1973	15
1974	15

*Les Inskeep*

GEI:mmr

CC: Mr. G. Adam  
Mr. R. Thomson

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SOURCES OF PATENT DISCLOSURES

Coming thru RC Patent Liaison Office

	<u>(1975)*</u>	<u>1974</u>	<u>1973</u>	<u>1972</u>	<u>1971</u>
R & D	(19)	14	14	15	13
Manufacturing Engineering	(2)	10	3	0	0
Others	(4)	3	0	2	0

\* Data for half year ending June 30

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A tabulation of numbers of U.S. patents issued to the large U.S. cigaret firms in each of these years is as follows:

	<u>1968</u>	<u>1969</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>
American Tobacco	5	2	1	4	0	0	0
Brown & Williamson	8	3	6	13	7	11	26
Liggett & Myers	3	1	3	5	8	5	8
P. Lorillard	3	1	2	2	0	0	1
R. J. Reynolds	20	18	21	36	26	12	11
Philip Morris	19	20	21	21	20	15	15
(PM--Tobacco)	(18)	(17)	(13)	(10)	(13)	(13)	(9)

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TO: Directors & Managers

DATE: May 27, 1970

FROM: H. Wakeham

SUBJECT: Guidelines on Patent Policy for R&D

### INTRODUCTION

Patents and trademarks fall under the general category of industrial property rights along with such other assets as know-how, designs and copyrights. A patent represents temporary but exclusive permission from the state to exclude or control others in the practice or utilization of a specific invention or discovery. In the United States the exclusivity lasts for 17 years from date of issue of the patent whether or not the patent owner exercises his rights.

A trademark is a work, name, or symbol used to identify a manufactured product and to distinguish it from the products of other manufacturers. In the United States a trademark used in interstate commerce can be registered with the federal government for an initial period of 20 years, with indefinite renewals for additional periods of 20 years each. Registration affords protection against another's use of the same or a similar mark but does not by itself give exclusive ownership. Trademark rights have to be earned by continuing proper use and protection, but once earned and protected by proper use, trademark rights last as long as desired while rights under patents or copyrights extend for only a limited period of time.

It is clear from the above that trademarks are quite different from patents and that questions and decisions regarding trademarks cannot be tied together with any discussion of patents or patent policy. The following discussion relates only to patents.

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### PATENTS AS VALUABLE PROPERTY

Variations in national laws, business practices, and economic conditions have a direct bearing on the essence of any patent so far as its nature and value as a property is concerned.

As a result, patent practice, especially in international areas, is a complicated matter requiring careful study prior to decision making. Good patent management requires information for decisions from virtually all departments: finance, research and development, legal, production, marketing, and long-range planning.

Patent management must deal with three major topics:

1. Decision to file and, if so, where.
2. Maintenance of patent rights.
3. Utilization of patent systems to further business interests.

In each area the procedure is superficially simple: the alternative courses of action are analyzed, their costs estimated, the profitability of each to the corporation as a whole is weighted, and the proper choice is automatically revealed.

In practice, or course, each of these steps can be very complicated.

Patents represent valuable company assets which have been found to be an important factor in the growth of American industry. The following reasons why companies should obtain patents have been given:

1. To protect new developments for future commercial use.
2. To protect current commercial operations and products.
3. To provide a legal basis for granting licenses to others, thus enabling them to benefit by the discovery.
4. To create a legal asset which may be used in place of royalties or other money consideration in negotiating licenses with others.

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5. To provide publication to increase the public knowledge and promote the progress of the industry.
6. To avoid the necessity for secrecy.

Three examples in our own corporate experience will suffice to illustrate the importance of patent protection:

1. The patent position and technical know-how of American Machine & Foundry have made it necessary for us to pay them during the past years a total of approximately two million dollars in royalties for our present BL process. Our royalty costs are still running at the rate of about \$140,000 per year.
2. The high development cost (in excess of \$600,000) and the high initial investment (approximately 11 million dollars) justified our seeking the broadest possible patent protection for our plastic package throughout the world. Although the cost of this protection approached \$50,000, this sum is negligible in terms of the total investment and represents a small price to pay for protection insurance.
3. After the American Tobacco Company introduced Montclair cigarettes we learned they were attempting to obtain a patent on the principle of using carbon in a cigaret filter as a means of introducing flavor components into smoke. Since we also had inventions along this line, we quickly filed patent applications of our own and established an "interference" in the U.S. Patent Office with the American application. As a result we were able to obtain a world-wide royalty-free license to use this product idea for ourselves. In fact, had our investigation corresponded a little more closely to American's, our prior invention dates would have enabled us instead of American to obtain the patent. In this case we would have been in a position to prevent American from manufacturing Montclairs or to extract a royalty payment from them.

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( ) The "insurance value" and/or "defensive value" of a patent is an aspect of research and development that is frequently overlooked. Inherent in allocation of funds for research is the assumption that something of commercial value will result. Patent protection in general will have a bearing on that value. It may be stated that as a general rule in American industry a successful patent comes from an average of at least \$250,000 or more in research and development. Our own experience is in this vein. During the past five years Philip Morris R & D has made significant progress in presenting disclosures to our patent attorneys from which a significant number of patent applications have been filed. It costs approximately \$3,700 to prepare and file an average patent application in the United States. Our R & D program should be sufficiently productive to generate approximately 25 applications a year for a total cost of about \$92,500. This sum is exclusive of foreign filings. It represents only about 1.5% of the R & D cost and again may be considered a cheap insurance against the possible loss of R & D results to our competitors.

#### PATENTS AND SECRECY

( ) The alternative to obtaining a patent to protect our know-how is secrecy. The use of secrecy as a means of protection is rapidly diminishing. Many new and efficient methods of communication are now available to us to learn about our competitors' business. Analytical tools are becoming increasingly sophisticated, permitting us to analyze test market samples and products of our competitors with great rapidity and accuracy. (Of course, these methods are similarly useful to our competitors in finding out what we are doing.) Finally, the large number of people in our organization who of necessity require access to confidential information makes for greater frequency of information leaks and the smaller likelihood

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that we can protect our know-how by means of secrecy.

Sometimes one has to resort to secrecy because it is not possible to obtain patent protection. This situation may occur when there is a great deal of prior art and a patent application is rejected. In other cases, such as with some processing innovations, it might be virtually impossible to find out if a competitor is infringing a patent because we do not have access to his factories. If a patent cannot be "policed" it may not have protective value. Secrecy with all its drawbacks may then give better protection to our know-how in this situation.

In summary, Philip Morris has recognized that patents are of value to the Company. This fact is daily confirmed by our actions in (1) requiring all new employees to sign an invention assignment agreement; (2) retaining an outside legal firm to assist in the acquisition of patents; (3) maintaining a patent officer in the Research and Development Department; (4) using patents consistently to protect our position in areas of greatest benefit and value to us.

#### WHAT TO PATENT

Since our primary business is in the United States and since the application of a patent in the United States gives us a one-year lead time in patent applications in foreign countries subscribing to the International Patent Convention, our initial decision must be on whether or not to file in this country. Every disclosure being submitted to our patent attorney should go through an initial screening process at R & D which answers certain fundamental questions and which permits it to be classified as falling into one of three situations:

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- (a) The invention is commercially important and may be patentable. In this situation a patent application should be filed, even though patentability may be doubtful. The Patent Office has often allowed claims we thought might be rejected.
- (b) The work is commercially unpromising but appears to be patentable. In this case we should file in most instances in the United States because it is hard to predict whether or not the current situation with respect to commercial application will pertain in the future.
- (c) The work is commercially unpromising and appears to be unpatentable. In this case no patent application should be filed.

( ) The classification and evaluation of a disclosure requires consideration of the following questions:

1. Is the invention broad or is it limited to very narrow specific conditions?
2. How much investment or effort will be required to use it commercially?
3. How close is it to the Company's business or business philosophy?
4. What sales and profits can be anticipated from the successful pursuit of the patent?
5. What effect will the patent disclosure or the obtaining of patent rights have on our competitors?

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6. What opportunities might occur for licensing the patent know-how to other companies?
7. How does the expense of obtaining a patent and maintaining it compare with the benefits to be obtained?
8. If a patent is obtained, can it be policed against infringement?

With answers to these questions, the decisions to file in either the United States or in foreign countries are much more easily made. Our experience and practice lead to the following general principles for patent filing decisions:

1. We will seek patents on those inventions which are directly related to our current or clearly contemplated business.
2. We will seek patents on inventions related to competitive business provided such a move shows reasonable promise of protecting our freedom of action in a vital sphere of interest. For example, a competitive process for making a reconstituted tobacco sheet might be patented for defensive purposes even though we do not at present contemplate using the process.
3. We will seek patents on inventions not included in the above but which show reasonably good licensing potential.
4. We will not seek patents on inventions which involve essentially laboratory equipment and devices (gadgets). Our position with respect to these will be protected by publication in technical journals, thereby barring others from excluding us from the right to use the invention.
5. We will not attempt to patent inventions which cannot be policed by methods which are reasonable in the light of our current technology; that is, we must be able to prove patent infringement.

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6. We will not attempt to patent inventions which relate to areas in which our knowledge is limited. For example, in our exploration of electrostatic filters we have some inventions which may relate to storage and retrieval of information. The probability of obtaining successful patents in these areas is very low because of our lack of knowledge of this field. It is not practical for us to spend time and effort studying these fields out just to obtain a patent position. Our efforts can be better directed into areas in which we are expert.

#### WHEN TO PATENT

In general it is desirable to file a patent application at the earliest possible date. This is particularly true now that the U.S. Patent Office has decided to place much greater emphasis on the filing date than on the date of invention as proven by laboratory notebooks, etc., in making a decision on the existence of an interference. In many foreign countries the filing date is the only date which will be considered in establishing precedence over another inventor. Some inventions with great potential commercial value should be filed for patent application "constructively," that is, without waiting for demonstrated laboratory "reduction to practice," just to obtain as early a filing date as possible if it is certain the invention will be operable. It is always best to actually "reduce the invention to practice" in order to obtain an insight into the best way to operate the invention and into some of the limits of the invention.

A decision to file in foreign countries should be made within six months of the date of filing in the United States. Countries subscribing to the International Patent Convention will

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accept the date of U.S. filing as an invention date if filing is made within one year after the U.S. filing. This arrangement gives the inventor a time advantage but necessitates an early decision since foreign filing may take some time in preparation and execution. In former times, when a first action by the U.S. Patent Office on new filings was fairly prompt, it was possible to wait at least until a first action had been taken by the U.S. Patent Office before deciding whether or not to file in a foreign country. The heavy burden now on the U.S. Patent Office does not permit this kind of wait, so that we no longer have the reaction of our own patent office to guide us as to whether or not foreign patents are likely to be obtained.

The speed with which foreign applications are processed and published should be taken into consideration in any decision on foreign filing. If it is desired not to have the patent material made public until the latest possible date, it may be wise to hold off filing in countries where early publication occurs, such as South Africa and Belgium.

#### WHERE TO FILE

The recognition of an invention which pertains to our business or which may prove to be of value to Philip Morris as a merchandise or licensing item is usually sufficient justification to apply for a U.S. patent. The considerations of this sort have already been outlined in the section on "What to Patent."

The selection of foreign countries in which application is to be made is a much more complicated matter. A proper decision of whether or not to seek foreign patent protection should be based on expected return or on imputed value of the patent.

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( ) In order to arrive at such a value, certain broad categories must be surveyed, such as the competition, production and marketing costs, contribution of the item to the art, international economics developments, likelihood of licensing or interfering, and long-range plans. A careful and detailed study of each patentable item with reference to each of these variables and to each national scene is clearly beyond the practical capability of most companies. Consequently patent managers have usually adopted the rule of thumb to "patent where significant sales are indicated and/or where manufacture will or might take place." This practice has been followed in our own company wherein the Patent Committee has set up categories of countries where we are manufacturing or doing business as per the following list:

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List of Foreign Countries for Filing  
Philip Morris Patents  
As of May 1970

	GROUP I For Protection of Subsidiaries (Present and Future)	GROUP II For Protection of Licensees (Present and Future)	GROUP III Major Export Markets not in Groups I and II
	Canada		
Europe and Africa	Switzerland Nigeria Holland Belgium Great Britain Germany	Austria Finland France Italy	Azores British Gibraltar Canary Islands Denmark Iceland Iran Ireland Israel Luxemburg Madeira Malta Morocco Netherlands Norway Poland Portugal Spain Sweden Yugoslavia Turkey
Latin America	Argentina Dominican Republic Guatemala Mexico Puerto Rico Venezuela	Aruba Bolivia Panama	Bahamas Barbados Bermuda Brazil British Honduras Chile Columbia Costa Rica Ecuador El Salvador French Guiana French West Indies Greenland (Military) Guyana Haiti Honduras Jamaica Leeward & Windward Is. Netherland Antilles Nicaragua

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List of Foreign Countries for Filing

Philip Morris Patents

As of May 1970

(Continued)

GROUP I For Protection of Subsidiaries (Present and Future)	GROUP II For Protection of Licensees (Present and Future)	GROUP III Major Export Markets not in Groups I and II
		Paraguay Peru Surinam Trinidad & Tobago Uruguay Virgin Islands
Pacific (Far East)	Australia India Malaysia New Zealand Pakistan Singapore	Burma French Pacific Islands Guam Indonesia Japan Korea Nepal Okinawa Samoa Taiwan Thailand Viet Nam Laos Cambodia
Tropical Africa		Burundi Cameroons Cape Verde Central Africa Rep. Congo Dahomey Gambia Guinea Kinshasa Liberia Mauritania Portuguese Guinea Rep. of Ivory Coast Senegal Sierre Leone Spanish Africa Togo Volta

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Inherent in this type of catalog approach is the possibility of missing the boat. Conditions may change rapidly. A given invention may not fit the pattern precisely and the Patent Committee may become locked into the format rather than use it as an accessory. This list of countries should be revised frequently with adequate consideration for the long-range plans of Philip Morris International.

#### MAINTAINING PATENTS

The patent management group, in addition to deciding about what, when, and where to file, should concern itself with two additional tasks relating to the maintenance of the patent portfolio: (1) Review the patent portfolio periodically to ascertain if taxes, fees, or annuities should be paid to keep the patent in force; (2) Police the existing patents to catch and stop infringements. While much of this work can be handled by patent counsel, they must rely on information from varying departments at various levels to keep them up-to-date with respect to patent maintenance and infringements. Good communication lines are the key to success in this effort.

#### CONCLUSIONS

1. A well developed patent position represents a valuable asset to Philip Morris Incorporated and proper steps to improve this position are worthy of the effort and expense required.
2. First and most important of these steps involves an evaluation of the invention in terms of the business position of the company.
3. Foreign filings should also be decided on the basis of business potential even though the evaluation may be considerably more difficult to make than that of the domestic situation.

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## RELATIONS WITH WATSON, LEAVENWORTH, KELTON, & TAGGART

When Philip Morris was generating relatively few patents, we depended completely on Watson, Leavenworth, Kelton, & Taggart for advice and guidance in the preparation of patent disclosures and in carrying out our patenting program. As we became more experienced we began to recognize a number of problems which we have attempted to correct - in some cases without success.

Crucial aspects in obtaining patent rights is to be the first inventor or the first to file a patent application, preferably both. One of the reasons for the establishment of a patent liaison officer is to shorten the time between the invention and the filing of the patent application. The procedure generally involves preparation of a disclosure statement for the attorney who then uses the information in the disclosure to prepare the application for filing. In our situation this time period breaks down into two parts: (1) the length of time required for us to get the disclosure to the attorney, and (2) the time required by the attorney to prepare the application and to file it. In our study of the performance by W.L.K.T., we have concluded that in our experience both the first and second time periods have been too long, especially the latter. The tabulation which follows shows that in over 60 cases examined the average time for disclosure preparation was approximately four months while the average time from disclosure to filing was 14 months. This time period is approximately five to six times as long as the average of three other corporate patent departments examined as cases for this study. It has resulted in some cases in our inability to get a patent issued or in prior filings by others and subsequent interference proceedings.

This practice of slow filing has also probably contributed substantially to the overall patent cost. We have examined a published

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survey by the Association of Corporate Patent Counsels regarding patent preparation and filing costs in the U.S.A. and calculated the average cost to file as approximately \$3,000 per filing. (Since not all filings result in issued patents the cost per issued patent comes out to be approximately \$4,000). We do not know what the W.L.K.T. patent costs are, but in view of the relatively small number of patents which are filed and issued to Philip Morris, we suspect the cost may be substantially greater.

Certainly one of the contributing factors to higher costs, as well as certain communications problems with W.L.K.T., is the geographical distance between New York and Richmond. Another factor is the utilization of W.L.K.T. for patent and licensing advisory services in the New York Office and the fact that W.L.K.T. fees are charged to the legal department rather than to the research department where most of the service is rendered. We estimate that at the established rate of \$90 per hour for the services of the W.L.K.T. senior patent attorney, one day of his time in Richmond plus travel expenses, etc., would result in a billing of approximately \$900. This cost is far above the cost of an in-house attorney who would be performing the same function.

The following chronology also shows that a large proportion (11 out of 25) of patent applications have been abandoned after filing. In most of these cases the examiner has finally rejected all proposed claims after which W.L.K.T. has usually recommended abandonment rather than appeal. They argue that an appeal is expensive and usually not worthwhile. It seems to us that a competent patent firm should be able to pre-evaluate with greater success the probability of getting claims accepted. Other patent counsels with whom we discussed this point, tell us that patent firms do not like to make appeals because of the large amount of work involved. On the other hand, the client having made the decision to file a patent, generally will have recognized its potential value as greatly in excess of the cost of appealing the examiner's decision.

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# Chronology of Recent Research Center Inventions

P.M. No.	Received from Inventor	# Months to Attorney	Disclosure to Attorney	# Months to Filing	Filing Date	Patent Issued
566	5/70	7	1/71	18	7/72	4/74
567	4/70	Abandoned				
568	5/70	2	7/70	5	12/70	Abandoned
569	1/70	5	6/70	20	2/72	"
570	6/70	1	6/70	15	6/72	9/74
571	3/70	11	2/71	15	5/72	Abandoned
572	Abandoned					
573	5/70	6	11/70	14	1/72	7/73
574	4/70	5	9/70	20	5/72	Abandoned
575	Abandoned					
576	2/70	14	4/71	27	7/73	Pending
577	Abandoned					
578	Abandoned					
579	Abandoned					
580	Abandoned					
581	10/70	2	12/70	13	1/72	11/73
582	11/70	4	3/71	Abandoned		
583	1/71	2	3/71	14	5/72	Abandoned
584	3/71	1	4/71	13	5/72	6/73
585	3/71	10	1/72	16	5/73	Pending
586	3/71	5	8/71	12	8/72	Abandoned
587	3/71	3	6/71	5	11/71	5/73
588	4/71	4	8/71	22	6/73	Abandoned
589	5/71	Abandoned				
590	4/71	8	12/71	8	8/72	6/75
591	Abandoned					
592	10/71	3	1/72	11	12/72	Abandoned
593	9/71	1	10/71	Abandoned		
594	11/71	3	2/72	11	1/73	10/74

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P.M. No.	Received from Inventor	# Months to Attorney	Disclosure to Attorney	# Months to Filing	Filing Date	Patent Issued
595	6/72	1	7/72	12	7/73	Abandoned
596	12/71	3	3/72	10	1/73	Abandoned
597	2/72	Abandoned				
598	2/72	2	4/72	34	2/75	Pending
599	4/72	1	5/72	8	1/73	5/74
600	4/72	4	8/72	Abandoned		
601	4/72	Abandoned				
602	5/72	1	6/72	11	7/73	6/75
603	5/72	Abandoned				
604	5/72	8	1/73	Abandoned		
605	5/72	4	9/72	6	3/73	Pending
606	5/72	3	8/72	Pending		
607	6/72	5	11/72	Abandoned		
608	8/72	9	5/73	10	7/74	Pending
609	Abandoned					
610	Abandoned					
611	} Application submitted to attorneys through N. Y. Office				8/72	8/73
612					10/72	5/74
613	10/72	2	12/72	Abandoned		
614	1/73	Abandoned				
615	Abandoned					
616	4/73	2	6/73	24	6/75	Pending
617	4/73	3	7/73	Abandoned		
618	4/73	3	7/73	8	3/74	Abandoned
619	4/73	Abandoned				
620	4/73	3	7/73	8	2/74	Pending & Interference
621	5/73	7	12/73	9	9/74	
627	8/73	14	10/73	Combined with #620		
628	11/73	1	12/73	13	1/74	3/75

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Chronology of PM #620 and PM #627

PM #620 Expansion of Tobacco with Carbon Dioxide

PM #627 Tobacco Expansion with Carbon Dioxide: Apparatus

4-30-73	Invention record #620 received from inventors
7-10-73	Disclosure #620 started
7-20-73	Draft disclosure to inventors
7-31-73	Disclosure #620 to W.L.K.T. - request for highest priority
8-22-73	Invention record #627 received
9-24-73	Draft disclosure #627 to inventors
10-18-73	Examples for 620/627 to W.L.K.T.
10-22-73	Disclosure #627 to W.L.K.T.
11-20-73	Received draft application
1-7-74	Received revised application
1-21-74	Returned with final revisions
2-1-74	Combined application #620/627 received
2-6-74	Final application executed, returned to W.L.K.T.
2-12-74	Filed in Patent Office

Time from invention to submission of disclosure was 3 months.

Time from disclosure to filing of application was 6-1/2 months even with priority request.

In this case we filed five days after Airco and became the junior party to an interference proceeding.

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PHILIP MORRIS

U.S.A.

RESEARCH CENTER: P.O. BOX 26583, RICHMOND, VIRGINIA 23261 TELEPHONE (703) 275-8361

July 31, 1973

Mr. Howard K. Kothe  
Watson Leavenworth Kelton & Taggart  
100 Park Avenue  
New York, NY 10017

Re: Expansion of Tobacco with Carbon Dioxide PM 620

Dear Howard:

Enclosed is my disclosure (inventors de la Burde and Aument) concerning liquid carbon dioxide impregnation of tobacco for puffing. Also enclosed are the disclosure as sent to me and memos describing equipment and operation. Example IV is provided for your information but does not illustrate the invention; you may decide whether it should go into the specification. It appears to me that the expansion process is conventional, and that the invention lies in the impregnation method. Further examples will probably be forthcoming; please let us know if any particular type is needed.

This is regarded as a very important development and it should receive highest priority (over PM #616 and 617 in particular). Those disclosures may provide background material useful in the present case.

Sincerely yours,

*G. Esler Inskeep*G. Esler Inskeep  
Assistant Patent Officer

/sb

cc: K. Burns  
P. Eichorn  
F. Resnik  
R. Thomson

*Application for this patent was  
filed on Feb. 12, 1974, 6 1/2 months  
after the date of this letter.*

MARLBORO DENSON &amp; HEDGES PARLIAMENT VIRGINIA SLIMS MULTIFILTER ALPINE PERSONNA D'ADES

1000281513

EXPANSION OF TOBACCO WITH CARBON DIOXIDE PM 620

Dr. Roger Z. de la Burde and Mr. Patrick E. Aument of the Research and Development Department of Philip Morris, Inc., have disclosed to me the results of their investigation into the expansion of tobacco with carbon dioxide.

The process of the invention concerns primarily the impregnation of tobacco filler with carbon dioxide. The filler is immersed in liquid CO<sub>2</sub> at a temperature not less than -2°C, the liquid is drained away, and the gas is vented to bring the pressure to atmospheric with the result that solid CO<sub>2</sub> is formed on and in the filler. This is then subjected to heating by known methods to bring about puffing of the filler. There is little or no loss of moisture and excellent retention of water extractables.

The desirability of expanding tobacco to give filler of lower bulk density and greater filling power is well known. A great many agents have been proposed to accomplish this. Some of these may leave residues which, though small, are foreign to tobacco, and thus presumably undesirable. Others are naturally present in tobacco but the residues might, in certain circumstances, exceed the naturally occurring levels. Water is no doubt the least expensive and least questionable additive from a residue standpoint, but means for achieving high levels of puffing require special and costly steps for impregnation. Most of these agents also remove a portion of the extractable components from tobacco during or prior to the expansion.

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Carbon dioxide, like water, would leave a residue (if any) entirely unnoticed by the smoker. It also would be harmless to handle during processing, as well as non-flammable. In Hawkins, U.S. 1,789,435, carbon dioxide is disclosed as one of the gases for impregnating tobacco to produce expansion by abrupt pressure release. However, the degree of expansion realizable from gas impregnation and puffing is relatively small. Efforts to impregnate tobacco with liquid carbon dioxide for subsequent puffing had been unsuccessful. Only by causing CO<sub>2</sub> gas to react with ammonia within the tobacco and by subsequent heating was good expansion realized (Armstrong et al, U.S. Appl. Ser. No. 68,532).

The present inventors have found that it is possible to impregnate filler with liquid CO<sub>2</sub> by maintaining the temperature at -2°C or higher (at the corresponding equilibrium pressure as a minimum), apparently thus avoiding freezing of the moisture in the cells which may exclude the impregnant. The moisture in tobacco absorbs enough soluble matter from tobacco to lower its freezing point; in addition, the CO<sub>2</sub> would cause further lowering. After a soaking period of 5 to 20 minutes, the excess liquid is drained, and the pressure is relieved by venting to bring to atmospheric pressure.

The CO<sub>2</sub>-impregnated filler then is heated, as for example in a turbulent air stream at 38° to 66°C, to bring about expansion. Other known heating means may be used, as for example infra-red heating on a belt, exposure in a cyclone dryer, or superheated steam in a tower (or a mixed atmosphere of steam and other gas). The maximum temperature applied will be determined by the length of exposure, CO<sub>2</sub> absorbed, and moisture content among other considerations, but will probably not be higher than 232°C, while the preferred range is 38 to 66°C.

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The tobacco leaf to be expanded may be in uncut form or in large pieces, but preferably is in shreds as used in filler so that no further cutting will be necessary. A moisture content of 8 to 18% (total weight basis) before impregnation is preferred; however, it is believed the method can be used with moisture levels near zero to about 50%. Moistures as stated herein are determined as oven-volatiles (O.V.) by the standard method, but not more than about 2% (absolute) of this value is other than water.

The impregnation takes place in equipment designed to withstand the necessary pressures of 900-1000 psig. The arrangement is not important so long as there is a valved inlet from a source of liquid CO<sub>2</sub> and one valved outlet at the bottom of the vessel whereby liquid may be drained off; a second valved outlet near the top, for venting, may be added, and it might be inserted as part of the inlet line if desired, placed between the vessel and the inlet valve. A means of heating the vessel, such as external coils, is necessary. Supporting the vessel on a load cell greatly simplifies measuring the CO<sub>2</sub> charge. A supplementary vessel similarly equipped with weighing means and heating coils is advantageous, though not essential, because it permits preheating a charge of liquid CO<sub>2</sub> from its usual low storage temperature (at say 300 psig) to perhaps 24°C (900 psig). This helps prevent solid CO<sub>2</sub> formation on charging the main vessel, and shortens the time the tobacco may be below the freezing point of its moisture. The filler is placed in the main vessel in a suitable holder such as a wire basket. The closed vessel is purged with CO<sub>2</sub> gas and the outlets closed, then liquid CO<sub>2</sub> is introduced at 250 psig sufficient to cover the contents. The temperature is raised without delay by the heating coils to at least -2°C but less than 31°C (the critical temperature) and this condition is maintained for 5 to 20 minutes while impregnation takes place. The liquid is then drained off by opening the lower outlet to a suitable reservoir or the like disposal system, and when all liquid is removed the vessel is vented to atmospheric pressure.

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The tobacco, which now contains about 8 to 20% of  $\text{CO}_2$  by weight, most of it presumably solid under these conditions, is removed and passed through any of several rapid heating systems to achieve puffing. Systems for this expansion process are most satisfactory which provide rapid, turbulent contact with the hot gas or vapor. With proper control of temperature and exposure time the product may be recovered in the puffed state at a desired moisture content such as 12% so that no reordering is required as it is with product from many expansion processes.

The attached memo of April 20, 1973, inventors to Mr. Burns, shows a schematic diagram of a possible arrangement of equipment to carry out the impregnation process of the invention (Figure 1), together with operating instructions. Figure 2 is a revised and improved form of Figure 1. The reheating of the vessel in Step 14 is now considered unnecessary; it appears in Example III. "Liquidor" is a (registered?) trade name of Air Reduction Co., Murray Hill, N.J., 07974.

The invention is illustrated by the following examples.

#### EXAMPLE 1

One pound of bright filler at 12% moisture was enclosed in a wire cage and placed in a pressure vessel. After purging with  $\text{CO}_2$  gas,  $\text{CO}_2$  liquid was introduced to a sufficient level to cover the tobacco sample. The pressure was raised to 600 psig by heating the vessel and was held for 20 minutes. After the equilibration period the pressure was reduced to 350 psig and subsequently held for an additional 5 minutes. The excess  $\text{CO}_2$  liquid was drained and gas vented rapidly so as to form solid  $\text{CO}_2$  in the tobacco structure. Two samples of the filler were taken. The first sample was spread in a thin layer and allowed to come to room temperature ( $21^\circ\text{C}$ ). The second was gently heated by a hot air flow (about  $66^\circ\text{C}$ ). This heating gasifies the  $\text{CO}_2$  which exerts an expansionary pressure.

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The results are listed below:

<u>Sample</u>	<u>Filling Power, cc/10 grams</u>	<u>% O.V.</u>
Control	33	13.2
21°C	53	13.5
66°C	62	12.2

The data show that the expansion due to the vaporization of CO<sub>2</sub> solid was considerable and that the negligible loss in O.V. eliminated the reordering step, used currently in other expansion techniques. Other heating methods (quartz lamps, heated belts) also were effective in expanding filler impregnated in this way.

The pressure reduction to 350 psig was experimental and probably did not contribute to the results.

#### EXAMPLE II

Five pounds of bright filler at 12% moisture was impregnated with CO<sub>2</sub> liquid as described in Example I. The sample was expanded by a hot air flow (66°C). Samples of the unexpanded filler (control) and CO<sub>2</sub>-expanded filler were submitted for analysis of the major chemical constituents. The results of those analyses are listed below:

<u>Analysis</u>	<u>Control</u>	<u>CO<sub>2</sub> expanded</u>
Moisture (O.V.)	11.8-12.5%	12.5%
Total Alkaloids	2.1-2.3%	2.1%
Reducing Sugars	9.8-12.1%	11.8%
Glycerine	1.5-1.72%	1.62%
Propylene glycol	1.5-1.7%	1.5%

The CO<sub>2</sub> expanded filler shows little change from the control, and this preservation of original components is important.

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### EXAMPLE III

The equipment shown in schematic Figure 2 was employed. "Liquidor" I was loaded with 150 lb. of liquid CO<sub>2</sub> from the supply at 250 psig and shut off, then heated to 24°C (900 psig). Two pounds of MF bright tobacco with nominal 12% O.V. was placed in the basket in "Liquidor" II which was then sealed. "Liquidor" II was flushed with CO<sub>2</sub> gas, closed, and 50 lb. of liquid CO<sub>2</sub> was introduced (this was known to be sufficient to cover the basket). The second "Liquidor" was then closed off and heated to 24°C (900 psig). After 10 minutes the liquid CO<sub>2</sub> was drained off by opening the lower valve; this required about 30 sec. The vessel was closed and reheated to 8°C (about 600 psig), then vented at the top to atmospheric pressure in about 30 sec. When the filler was subjected to heating it expanded as did that in preceding examples.

### EXAMPLE IV

One pound of 12% O.V. bright cut filler was impregnated with CO<sub>2</sub> gas at a pressure of 900 psig. After an equilibration time of 10 minutes the gas was vented to the atmosphere and the sample was removed. A portion of the filler was heated at 66°C in a low velocity air stream. A second portion was allowed to come to ambient temperature conditions (21°C). The results are listed below:

	<u>Temperature</u>	<u>Filling Power, cc/10 g</u>
Sample 1	66°C	37
Sample 2	21°C	34
Control	-	32

The results indicate that the immersion of the filler in the carbon dioxide liquid seems necessary and that the entrapment of CO<sub>2</sub> under pressure followed by the pressure release does not exert sufficient force to effect expansion.

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The results of any further development of the expansion of tobacco with carbon dioxide will be reported and will become a part of this disclosure.

*G. Esler Inskeep*

G. Esler Inskeep  
Assistant Patent Officer

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CASE STUDIES OF THE PATENT FUNCTION  
IN OTHER CORPORATIONS

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Company X

Reynolds Metals Company

American Home Products Corporation

A. H. Robins Company

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X COMPANY 1974

Pending Applications (U.S.)	32
Disclosures Received	18
Applications Filed	18
Patents Issued	14
Patent Clearance Opinions	16
Miscellaneous Opinions	5
Trademark Applications Filed	4
Miscellaneous T.M. Problems	18
Foreign Applications	6
Company Visits (Man Days)	6
U.S. Prosecution	(unknown)
Foreign Prosecution	(unknown)
Foreign Pending	44
Interference Settlement	1

Billings \$32,739.52

X Company is a medium size American dyestuff manufacturer which has no patent department of its own. It utilizes a well established legal patent firm in Washington, D.C., to provide all of its patent services. These data indicate that the cost in this case is approximately \$2,000 per filing.

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June 16, 1975

## Patent Function of Reynolds Metal Company

Information obtained from an interview of Mr. John Glenn, Chief Patent Counsel, June 12, 1975.

Various departments in Reynolds Metals generate inventions leading to from 60 to 100 U.S. patent applications every year. Of these approximately 45 to 75 result in issued patents. Approximately one-third of these patent applications are also filed in foreign countries. The number of foreign filings varies from patent to patent depending on the relationship of the patent subject and Reynolds' business in the foreign countries being considered.

To carry out this activity Reynolds Metals has a patent group consisting of five patent attorneys and four secretaries - patent clerks. This patent group is part of their legal department. The attorneys receive disclosures by direct contact with inventors and are responsible for filing and prosecuting patent applications, patent searches, and patent litigation. Because of the litigation workload, most of the actual applications are prepared by outside patent attorneys. The filing papers are not filed with the U.S. Patent Office but are returned to the internal attorneys who review them and then insert the names of Reynolds attorneys into the patent application. The application is, thus, ultimately filed with the names of Reynolds attorneys as the "counsel(s) of record" so that all actions and prosecutions of the patents after application are handled by the inside counsels. The choice of outside patent firm is made by the Chief Patent Counsel. His criteria of choice is quality and speed of application preparation, cost, and expertise of the outside patent attorneys.

In 1974 the total budget of the Reynolds Patent Group was \$453,611. Of this approximately \$234,700 was paid to outside firms for their services. The outside firms are also used in patent litigation. Mr. Glenn estimates that litigation costs amount to about \$220,000 per year of which approximately two-thirds is paid to outside firms. The Group operates on a fixed annual budget and does the best it can within this limitation.

The Reynolds Metals Patent Department budget breaks down approximately as follows:

## Internal Costs

Preparation of disclosures, search supervision, filing and prosecution of applications	168,000
Patent litigation	52,000

## External Costs

Preparation of patent applications and searching	67,000
Litigation	168,000
	<hr/> 455,000

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Patent Function of Reynolds Metal Company

Page 2

June 16, 1975

According to these figures, the 1974 patent cost of approximately \$235,000 comes to an average of about \$3000 per patent filed (\$4000 per patent issued).

Mr. Glenn said that coming to Reynolds Metals he immediately effected a substantial savings in foreign patent maintenance fees by paying directly through a foreign patent firm rather than through a U.S. patent firm and an international firm. He calls the present practice the "greatest rip-off of all patent charges." The foreign fee is at least doubled by every party in the chain so that a \$7 fee becomes a \$56 charge by the time it reaches the ultimate patent holder.

Mr. Glenn stated that their goal is to file within three months of the date of invention record or disclosure. "Hot" items can be run through in one month. Exceptional cases require six months. Mr. Glenn says he is a strong proponent of early filing to get an early filing date. Improvements on the inventions and modifications are handled as "continuations in part."

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July 27, 1975

### Patent Function of American Home Products Corporation.

Information obtained from an interview with Dr. Victor Bellino, Assistant General Counsel and Chief Patent Counsel, June 24, 1975.

American Home Products Corporation is an association of fourteen operating divisions manufacturing and selling prescription drugs (\$824,000,000), package drugs (\$309,000,000), food products (\$495,000,000), and housewares and household products (\$555,000,000) making gross sales in 1974 of \$2,183,000,000.

Many of the products are covered by patents and trademarks. Consequently, the law department includes a fairly extensive patent and trademark division headed up by Dr. Bellino. (Dr. Bellino is an organic chemist who started as a patent liaison officer in Wyeth Laboratories, one of the AHPC operating divisions. He attended night school, eventually took a law degree, and started an in-house patent group at that time reporting to the vice president for R&D. In 1961 various patent and trademark groups became a part of the law department. Dr. Bellino moved to New York and became Chief Patent Counsel in 1970).

The patent and trademark organization consists of seven groups of which four are located outside of New York City in the offices of major operating divisions (see organization chart). Most patent filing and prosecution are done by these out-of-town groups at the division level. The New York office handles the trademark work, a limited amount of patent work, licensing, and most of the patent litigation. All of the business with the U.S. Patent Office is done by the in-house personnel. This includes prosecutions, interference proceedings, and minor litigations. Foreign patent filings are also done by the in-house groups dealing directly with legal firms or patent offices in the countries where the filing takes place. Much of the foreign filing is now being handled through the Taplow group which is located in London, U.K. Outside legal firms in the U.S.A. are used mainly for litigations relating to patent infringement (not interference proceedings).

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The following table summarizes AHPC patent department costs: total in-house budget for patents and trademarks was approximately \$1,500,000 in 1974.

Location	Patent	Trademark	Professional Staff
N. Y. Hdqtrs.	\$482,000	\$350,000	14 (Patent costs are mostly for licensing and litigation)
Wyeth Labs. Radnor, Pa.	250,000		5 (This group files approximately 100 U. S. applications per year of which 75-80 issue)
Ayerst Labs. Montreal	100,000		3 (Do all Canadian filings)
Ekco Products Franklin Park, Pa.	30,000	20,000	1 (Generate 5 to 10 patents per year. Also handles trademarks)
John Wyeth & Son London, U.K.	120,000	30,000	4 (Makes all foreign filings in "English Law" countries)

The patent portion of this program involves each year approximately 200 U. S. filings leading to 150 issued U. S. patents. In addition, foreign filings amount to between 300 and 400. In addition to these costs, they have outside costs for litigation and maintenance of foreign patents and trademarks amounting to approximately \$900,000 per year.

The decision with respect to foreign filings is made at a monthly case review which takes place in the International group at Wyeth Laboratories. The meeting is chaired by a vice president of Wyeth International because the costs of international filing are charged back to the International group.

The Wyeth Laboratory organization also has a patent committee which regularly reviews all invention records or disclosures coming from inventors in the Wyeth organization. This committee makes the decision whether or not patent applications are to be filed; it is the function of the law department patent group to carry out the mechanics of the filing. Dr. Bellino stresses that the patent and trademark division of the law department is a service function to the operating division on the one hand, and, of course, to the corporate organization on the other. The decisions regarding whether or

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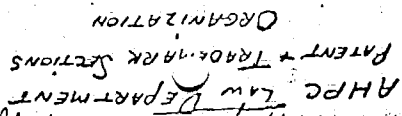
not patents are to be filed are considered to be technical and business decisions which are the province of the operating company, not the Corporate Law Department.

This policy came about through a very painful and costly experience which took place in the period 1958-1962. At that time, all decisions to file were being made by the newly organized patent group in New York. In 1958, Wyeth Laboratories submitted a use patent proposal for a drug called prokotazine, one of the phenothiazines. The corporate patent counsel refused to file because he thought it unimportant. Eventually after more research the application was filed in 1962. It was then discovered that a conflicting patent had issued to Schering Drug Company. In the meantime, Wyeth had spent several million dollars in clinical trials and had obtained FDA approval for the drug. As a result, although Wyeth had the product, Schering had the patent and refused for six months to give Wyeth a license to make and sell. Since the decision to defer had been made by the chief patent counsel, management subsequently decided to dispense with his services. (He later became affiliated with Watson, Leavenworth, Kelton, and Taggart).

Dr. Bellino says that they try to file patent applications within three months from the date of invention. When really high priority items come along, he selects a speedy attorney and the application can usually be filed within 10 days. They have learned the lesson that in filing a patent, time is of the essence.

1000281527





July 3, 1975

## Patent Function of A. H. Robins Company

Information obtained from an interview of Mr. William King,  
Chief Patent Counsel, July 2, 1975

A. H. Robins Company is a pharmaceutical company with gross revenues in 1974 of \$210,000,000. Most of this comes from ethical and proprietary drugs. A small part comes from nonpharmaceutical business such as Sargent's flea collars, chap stick, and a speciality line of perfumes.

Robins has a relatively small patent program, filing approximately 20 cases per year with the U.S. Patent Office. They do fairly extensive foreign filing, often as many as 40-45 countries amounting to approximately 300 to 400 foreign filings per year. They have a limited number of trademarks but a fairly extensive licensing and contract business resulting from their patented pharmaceutical formulations.

The patent group consists of Mr. William King, Chief Patent Counsel, a second patent attorney, and two patent agents, one of whom specializes in liaison with the R&D group and the other one devoting most of his time to filing, preparation, and prosecution of patent applications. In addition, they have an administrative assistant who handles trademark filings. They have three secretaries who handle the secretarial and clerical work of the department.

The 1975 budget for this program is \$375,000 of which \$155,000 goes to internal salaries, \$144,000 into the direct filing of foreign filings and maintenance fees, and \$76,000 paid to outside firms for special patent prosecution, interference, and infringement litigation. Approximately 90% of their filings yield patents. Most of these are composition of matter patents based on organic compounds prepared in their research department for possible drug use.

The patent group is in the same building as the Director of Research who reviews all invention records, makes decisions as to whether or not to patent, and sends the disclosure to the patent department. The time period from submission of the disclosure to filing of the patent varies --having been as short as three weeks in one case and usually not more than six months in more complicated and involved cases.

Mr. King offered some very interesting gratuitous remarks about the relationships between outside patent firms and their company as a client. Prior to his association with A. H. Robins he was working with Rockwell International who employed a single legal patent firm to do all of its work.

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He said that when an outside firm has exclusivity with a captive client they tend to put aside the captive client's work in order to give immediate response to competitive work. (This seems to be the situation we are encountering with Watson, Leavenworth, Kelton, and Taggart). Furthermore, when the patent firm is completely familiar with the client's field of knowledge they have a tendency to do additional research which, of course, is charged back to the client as part of the fee. At Robins they aim to do their own research in order to avoid dependence on an outside patent firm.

Robins deals with different patent firms in order to take advantage of the competition between them, giving work to those firms where expertise resides. (The practice of using competing patent firms is also employed by Reynolds Metals probably for similar reasons). Mr. King also said that old timers in the patent firm will tend to chop off newcomers in the corporation client simply to protect their business, using their advantage of greater experience and familiarity with the business. "Patent preparation, filing, and prosecution is the bread and butter of the outside patent firm and they will go to any lengths to protect it."

I asked Mr. King if abandonment of 40% of the patents applied for could be considered normal attrition. He responded that he thought it was much too high and that either the patents were filed in haste or the patenting firm avoided appealing the rejections because it usually amounts to a great deal more work than simple filing.

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## OUR PATENT FUNCTION NEEDS

(1) Philip Morris R&D needs a much more effective patent function operating within the Research Center where the majority of inventions are likely to occur. After the resignation of Mr. William Cridlin in July, 1974, we had six months without a senior patent liaison officer and a serious lapse in patent activity. This program has been actively revitalized by Mr. Gerhart Adam since his arrival in January, 1975. As a result, we now have 25 new inventions being prepared for filing. Twelve others have already been filed this year. We have 23 applications pending in the U.S. Patent Office. With a more vigorous program we could be filing 30 to 50 U.S. applications per year with just the disclosures now being made.

(2) A limited survey indicates that there are many useful and valuable inventions still undiscovered in the notebooks of our research personnel. We are going to inaugurate an educational program to get the scientists and engineers to help us identify these inventions and to evaluate their patentability.

(3) An aggressive patent program generating more good patents, especially foreign patents, is going to be of increasing value to Philip Morris International. We are advised that International is having more and more difficulty obtaining licensing fees based on trademarks. It will therefore be useful to them to be able to collect license fees on technology. This technology must be protected by patents if it is to be of value to the corporation.

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## RECOMMENDATION

It is recommended that Philip Morris establish within the Legal Department a patent group composed of a chief patent counsel, two patent agents (already on the Research Center staff), and one or two secretary-patent clerks to carry out a vigorous patent program. This entire group should be located in Richmond, preferably in the Research Center.

The chief patent counsel should report to a senior member of the Legal Department. He should be given full authority to prepare, file, and prosecute patent applications and to make assignments to outside patent firms as he deems necessary and to the best interests of Philip Morris. This new program should be phased in gradually, utilizing the services of Watson, Leavenworth, Kelton, & Taggart to maintain the present momentum and to provide continuity until the newly reorganized in-house function becomes well established and operative.

Watson, Leavenworth, Kelton, & Taggart should be clearly informed that henceforth we are going to judge them much more rigorously on their performance and that we are no longer going to feel any obligation, real or implied, to use their services exclusively as in the past.

Finally, it is recommended that serious consideration be given to Mr. Philip M. French, who is currently a young patent attorney on the W.L.K.T. staff, as a candidate for the position of chief patent counsel. We have had considerable experience with Mr. French in the course of our relations with W.L.K.T. and have a high regard for his ability. We believe there is a good possibility that Mr. French would accept an offer from Philip Morris.

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